

CLAIMS

What is claimed is:

1. A power converter, comprising:
 - a primary transformer winding circuit having at least one primary winding;
 - 5 a secondary transformer winding circuit comprising:
 - at least one secondary winding coupled to the at least one primary winding;
 - a controlled rectifier transistor, each primary winding having a voltage waveform with transition times which are short relative to the on-state and off-state times of the controlled rectifier; and
 - 10 a capacitive divider circuit, a signal controlling the controlled rectifier transistor being derived from the capacitive divider circuit.
2. A power converter as claimed in claim 1 further comprising a circuit to determine the DC component of the signal controlling the controlled rectifier transistor.
- 15 3. A power converter as claimed in claim 2 wherein the dc component of the signal is adjusted to provide regulation.
4. A power converter as claimed in claim 3 wherein a feedback circuit sets the DC component of the signal controlling the controlled rectifier transistor.
- 20 5. A power converter as claimed in claim 3 wherein the power converter provides multiple outputs, the DC component being adjusted to set an output level of at least one of the outputs.

6. A power converter as claimed in claim 1 wherein a control terminal of the controlled rectifier transistor is connected directly to the capacitive divider circuit.
7. A power converter as claimed in claim 1 wherein the capacitive divider circuit includes at least one capacitor external from the controlled rectifier transistor.
8. A power converter as claimed in Claim 1 wherein one of two capacitors composing the capacitive divider circuit is substantially entirely intrinsic parasitic capacitance.
9. A power converter as claimed in claim 1 wherein the capacitive divider circuit is coupled to a terminal of a secondary winding of a transformer in the power converter.
10. A power converter as claimed in claim 1 wherein the controlled rectifier transistor is in parallel with an uncontrolled rectifier.
11. A power converter as claimed in claim 10 wherein the uncontrolled rectifier is a body diode in the controlled rectifier transistor.
12. A power converter as claimed in claim 1 wherein a DC component of the signal is adjusted in response to a condition of the power converter.
13. A power converter as claimed in claim 1 wherein a DC component of the signal is adjusted to a state where only the uncontrolled rectifier carries current.

14. A power converter as claimed in claim 1 wherein a DC component of the signal is adjusted to a state where the controlled rectifier transistor is capable of only unidirectional current flow for a period of time.
15. A method for providing rectification in a power converter, comprising:
 - 5 controlling a voltage waveform across a primary transformer winding;
 rectifying an AC waveform by a controlled rectifier transistor in a secondary transformer winding circuit, each primary winding having a voltage waveform with transition times which are short relative to the on-state and off-state times of the controlled rectifier; and
 - 10 capacitively dividing the AC waveform to derive a control signal used to control the controlled rectifier transistor.
16. A method as claimed in claim 15 further including determining a DC component of the control signal.
17. A method as claimed in claim 16 further including adjusting the DC component
15 of the control signal to provide regulation.
18. A method as claimed in claim 17 wherein adjusting the DC component of the control signal includes feeding back a feedback signal derived from the regulated output of the power converter.
19. A method as claimed in claim 17 wherein (i) the power converter provides
20 multiple outputs and (ii) adjusting the DC component sets an output level of at least one of the outputs.
20. A method as claimed in claim 15 further including rectifying the AC waveform in an uncontrolled manner.

21. A method as claimed in claim 15 wherein capacitively dividing the AC waveform is done, in part, external from a component used for rectifying the AC waveform in a controlled manner.
22. A method as claimed in Claim 15 wherein capacitively dividing the AC waveform is done, in part, internal to a component having inherent parasitic capacitance used for rectifying the AC waveform in a controlled manner.
23. A method as claimed in claim 15 wherein a DC component of the control signal is adjusted in response to a condition of the power converter.
24. A method as claimed in claim 15 wherein a DC component of the control signal is adjusted to a state where only the uncontrolled rectifier carries current.
25. A method as claimed in claim 15 wherein a DC component of the control signal is adjusted to a state where the controlled rectifier transistor is capable of only unidirectional current flow for a period of time.
26. A power converter comprising:
- a primary transformer winding circuit having at least one primary winding;
 - a secondary transformer winding circuit comprising:
 - at least one secondary winding coupled to the at least one primary winding;
 - means for rectifying an AC waveform by a controlled rectifier transistor, each primary winding having a voltage waveform with transition times which are short relative to the on-state and off-state times of the controlled rectifier; and
 - means for capacitively dividing the AC waveform to derive a control signal used to control the controlled rectifier transistor.